Communicable Disease BULLETIN
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Tobacco Use Among Middle and High School Students in New Hampshire

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[Note: This issue the *Communicable Disease Bulletin* is including the following chronic disease topic highlighting epidemiology in this area. We hope to include further topics such as this as we consider changes to the publication.]

Tobacco is the leading cause of preventable death in New Hampshire. Approximately 2,000 deaths attributed to smoking occur each year in the state. Overall, 1 in 3 persons who smoke will eventually die of a tobacco-related illness such as heart disease, cancer, or respiratory disease. In a 1998 survey, 25% of adults in New Hampshire reported being current smokers; another 31% reported being former smokers. Nationwide, about 80% of adult smokers started smoking before age 18. Efforts to prevent smoking-related illness and death are therefore dependent on controlling smoking initiation among the young.

Data on smoking among middle and high school students in New Hampshire are collected in two different surveys. The Youth Risk Behavior Survey (YRBS) was last conducted among students in grades 9-12 in 1999. The survey contained 12 questions on tobacco and was administered to 2,213 students from 54 schools throughout the state. The response rate was 54%. Information on students in grades 7 and 8 was obtained from the Youth Tobacco Survey (YTS) conducted in 2000; 1,525 students from 40 schools completed the 77-item questionnaire. The response rate was 70%.

'Ever use' was defined as any use of tobacco products during the respondent's lifetime, even one or two puffs of a cigarette. 'Current use of tobacco products' was defined as any use during the 30 days preceding the survey. 'Frequent use' was defined as use on 20 or more of the past 30 days. Except where noted, rates were similar for males and females. The sample size did not permit analysis by race/ethnicity or by geographic regions within the state.

Thirty-four percent of 7th and 8th grade students had tried smoking at least once in their lifetime. For high school students, 67% had experimented with cigarettes. Current cigarette smoking increased as students progressed from grade 7 to grade 12. The rate increased from 9% in grade 7 to 41% in grade 12 (see *Figure 1*). The prevalence of frequent cigarette use was 4% among 7th and 8th grade students and 19% among high school students.

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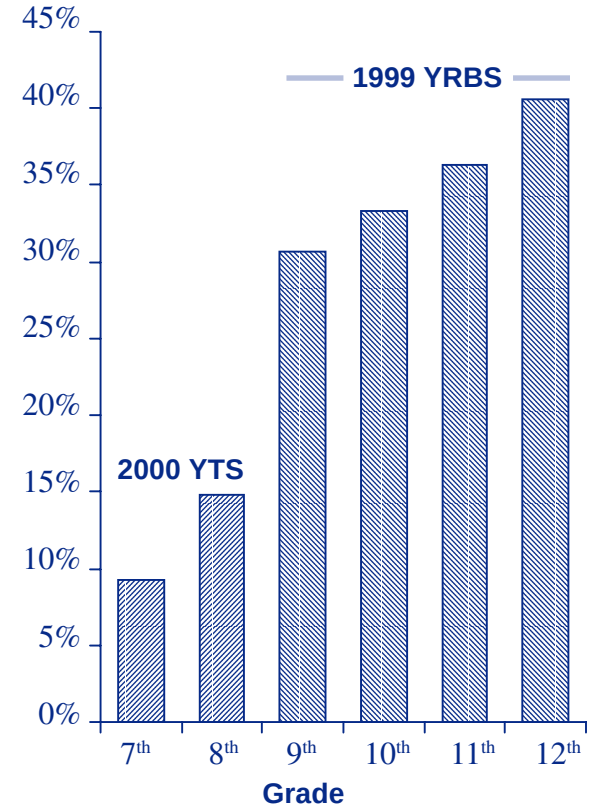

Figure 1. *Cigarette smoking among New Hampshire students in grades 7 – 12.*

An Evaluation of Passive Surveillance for Selected Reportable Diseases

District #3, New Hampshire, 1997-1998

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New Hampshire participates in the National Notifiable Disease Surveillance System (NNDSS) and reportable disease case counts are forwarded to Centers for Disease Control and Prevention (CDC) for inclusion in their publications, most notably the Morbidity and Mortality Weekly Report (MMWR). Evaluation is a necessary component of the collection of reportable diseases to assess the validity of data reported to stakeholders that is then utilized in the planning, implementation, and evaluation of public health interventions and programs. Both the CDC[1] and other authors[2] recommend surveillance systems be evaluated on a regular basis. New Hampshire's (NH) passive surveillance system for infectious disease was last evaluated in 1994. Since that time there have been numerous changes in which diseases are reportable, and among laboratory and infection control departments of reporting facilities throughout New Hampshire.

In 1999, a pilot study was conducted in public health nursing district #3, the west-central portion of the state including lower Grafton, Sullivan and western Merrimack counties, to evaluate the completeness of passive reporting of communicable disease reports by hospital laboratories to the NH Bureau of Communicable Disease Control (BCDC). There are no private or reference laboratories within the district. The usefulness, quality, and efficiency of the system were assessed. The system was also assessed for simplicity, acceptability, sensitivity and timeliness of reporting using guidelines previously published.[1]

Methods

The reportable infectious diseases monitored in this study were a cross-section of those that are investigated by the Bureau of Communicable Disease Control at the Department of Health and Human Services. Those events studied included: viral hepatitis A-IgM, culture or antigen for *Legionella pneumophila, Salmonella species, Shigella species, Escherichia coli* O157:H7 *(E. coli),* Campylobacter species, vancomycin-resistant enterococci and tuberculosis (positive smears for AFB &/or positive cultures). These specific reportable diseases were selected because they require laboratory confirmation to diagnose a confirmed case and they are of significant public health importance. Laboratory data identifying positive tests for these selected conditions were collected for the 2-year study period of 1997-1998. These data were compared with case reporting by these laboratories to NH BCDC's passive surveillance database. Practices regarding reporting were also ascertained through a questionnaire submitted to the laboratory directors or technical supervisors. Project staff interviewed the laboratory director, technical supervisor or infection control personnel.

Results

Overall reporting completeness was 92.1% for the events studied in the 2-year period. Completeness of reporting was lowest for campylobacter at 81.5%. Improvement was seen in the reporting of all conditions from 1997 to 1998 with completeness of reporting at 88.4% in 1997 increasing to 97.0% in 1998. Reporting timeliness following diagnosis, defined as receiving the report at BCDC within the time frame required by New Hampshire administrative rule He-P 301 for each event, was 65%. Timeliness of reporting improved from 43.7% in 1997 to 87.1% in 1998. Some delays in reporting following diagnosis were still noted in 1998 for both campylobacteriosis (range 0-12 days) and salmonellosis (range 0-11 days). The median time interval between date of onset and date of report decreased from 1997 to 1998 for campylobacteriosis (from 11 to 8 days), salmonellosis (from 11 to 8.5 days) and *E. coli* O157:H7 (from 9 to 5 days).

The qualitative aspects of the system were assessed and found to be quite complex, with multiple individuals, programs and sites involved. There are diverse options for reporting. Incomplete initial reporting was noted due to laboratories not having all the required information resulting in Bureau staff time being used to obtain demographic and provider information. Acceptability of the system was rated in 3 areas utilizing a scale of 1-5 where 1 = very easy and 5 = very difficult. The 4 reporting facilities rated ease of obtaining information to report (average 2.75), ease of actual reporting (av. 2.5), and time required to report (av. 2.75). One laboratory was fully computerized for reporting and 2 others were expanding their computer capabilities. They were anticipating that this would improve their quality and ease of reporting.

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Conclusions

This study provides the first review of the New Hampshire reportable disease system that has been conducted in five years. It is potentially important both for those gathering the data and those providing data. It indicates the quality of reportable disease data being reported to stakeholders and highlights areas in which efforts are needed for improvement. In keeping with this historically derived system, the reports received from health care providers and institutions initiate public health action towards communicable diseases. Following this, the NH Bureau of Disease Control provides services to those persons affected by the illness and helps assure appropriate control measures. This is especially important in high risk situations such as those infectious diseases studied in this investigation. In addition to these services, trends in reportable diseases are tabulated and presented through the statistical publication *NH Communicable Disease Bulletin*, and through the *Communicable Disease Annual Report*. Both publications are available through the agency website: http://www.dhhs.state.nh.us/nhcdcs.htm.

Delays in reporting following diagnosis could lead to delays in excluding those in sensitive occupations, such as food-handlers, and in the detection of clusters. A decrease in the time interval from date of onset to date of report from 1997 to 1998 for campylobacteriosis, salmonellosis and *E. coli* O157:H7 was noted as a positive step toward initiating timely community control measures. It should be noted, however, that none of the events monitored were reported within a time frame (onset to report) sufficient to prevent secondary/tertiary transmission. Interventions to improve the interval from onset to report are a more challenging parameter to change since it is contingent on case-patients seeking health care, providers ordering diagnostic testing, specimen collection and processing.

In the district that was studied, completeness of reporting has improved significantly and is of high quality. If this district is representative of the entire state, we can be confident that the data being presented is valid. Laboratories with computerized records not only reported a higher percentage of their cases to the state health department, but they also provided more complete information in the initial case reports. This improvement was verbally noted by one laboratory director and supported by results of the survey.

Data were studied only for 1997 and 1998 and were limited only to hospital laboratories within District #3. Results may not be generalizable for the entire state. Small numbers of cases also limited the ability to make valid subgroup comparisons or to do trend analysis.

A follow-up study has been done and is currently in draft form to assess the completeness of data initially reported by hospital laboratories, completeness of data on Reportable Disease Investigation Form following investigation by the public health nurse, and quality of the data reported. This sequel also determined if hospital laboratories had sent isolates to the New Hampshire Public Health Laboratories as requested. Having completed these pilot studies in one district, plans are now underway to partially repeat these efforts statewide.

For further information about the study, please contact the Bureau of Communicable Disease Control at (603) 271-4496 or 1-800-852-3345, extension 4496.

References

1. Centers for Disease Control and Prevention. Guidelines for evaluating surveillance systems. *MMWR* 1988; 37 (S-5): 1-18.
2. Klaucke DN. Evaluating public health surveillance. In: Teutsch SM, Churchill RE, eds. *Principles and Practice of Public Health Surveillance*. New York, NY: Oxford University Press; 1994. 158-174.

Hepatitis C: What Clinicians and Other Professionals Need to Know

An interactive web-based training available on the Hepatitis Branch web site http://www.cdc.gov/hepatitis

Hepatitis C: What Clinicians and Other Professionals Need to Know is an interactive web-based training program. This program provides users with up-to-date information on the epidemiology, diagnosis, and management of HCV infection and HCV-related chronic disease. Users can also test their knowledge of the material through study questions at the end of each section and case studies at the end of the program. By combining up-to-date clinical and epidemiological information with state of the art technology and graphics designed to enhance both the user's understanding of the material and the appearance of the program, this web-based training program provides a valuable educational tool to assist health professionals in preventing and managing HCV infection and HCV-related chronic disease. Continuing medical and nursing education credits are available free of charge from the Centers for Disease Control and Prevention upon completion of the training. The American Academy of Family Physicians will also grant their educational credits upon completion of training and filing with the Academy.

Bureau of Health Statistics and Data Management Web Site

We are pleased to announce the Bureau of Health Statistics and Data Management's web site accessible at ***www.dhhs.state.nh.us/healthstats****. The web site disseminates data on births, deaths, hospitalizations, cancer, and behavioral risk factor surveillance information. The site contains statistical information, copies of reports, information about requesting specific data from the Bureau, and links to other sites with useful health related data. In the future, we will also begin making free public use data sets available for download from the site.*

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The surveys also collected data on the use of cigars and smokeless tobacco. Current cigar use was reported by 4% of students in grades 7-8 and 16% of students in grades 9-12. Current use of smokeless tobacco was reported by 2% of students in grades 7-8 and 5% of high school students. For both cigars and smokeless tobacco, males were more likely than females to be current users.

Additional data from the Youth Tobacco Survey indicated that 47% of 7th and 8th grade students who currently smoke wanted to quit and 59% had made at least one attempt to do so during the past year. However, one-third of current smokers among middle school students felt the need to smoke daily suggesting that many were already addicted to nicotine.

Exposure to environmental tobacco smoke was common for both smokers and non-smokers. Sixty-two percent of 7th and 8th grade students were exposed to environmental tobacco smoke during the week preceding the survey; 41% lived with someone who was a smoker. Twenty-seven percent of 7th and 8th grade students had at least one of their four closest friends who was a smoker.

The findings from the Youth Risk Behavior Survey are subject to at least one limitation. Because the response rate for the survey was less than 60%, the results describe the behaviors of the survey participants, but cannot be generalized to all high school students in New Hampshire. Making direct comparisons between the two surveys is problematic.

Based on the survey results, New Hampshire needs to focus tobacco prevention efforts in three areas. First, preventing smoking initiation by youth. Since such a large number of smokers begin the habit as children, efforts to prevent smoking initiation among the young should eventually lead to a lower prevalence of smoking among adults. Second, encouraging young people who are established smokers to quit. Many young smokers want to quit, but need support to do so. Finally, reducing exposure to environmental tobacco smoke. Children should be able to grow up without exposure to secondhand smoke. It is not only a health hazard, but gives children the mistaken impression that smoking is a social norm.

A coalition of 26 organizations developed *New Hampshire's Comprehensive Tobacco Prevention and Control Plan* in 1999. The plan outlines the state's strategy for tobacco control based on practices shown to be effective. Funding for implementation of the plan comes from the settlement agreement between the states and the tobacco industry. For more information about the activities of the New Hampshire Tobacco Prevention Program, please call (800) 852-3345 ext. 6891 or visit the program's website at http://www.dhhs.state.nh.us/tobaccofree.